Social Media Analysis Training for Digital Talent Development in Indonesia

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Abstract

The development of digital technology has allowed people to share opinions on social media, send emails, make purchases online, to make phone calls every day. As a result, the amount of data continues to grow rapidly day by day. Most of the data available today is public and accessible to anyone, such as social media data, blogs, news, discussion forums, public government data, and others. With the immense value of this abundant source of social media data, there is an opportunity to extract knowledge or insights from this unstructured social media data, especially to understand opinions, current trends, or influential actors on information spread on the internet. As part of Telkom Surabaya's IT Community Service team that supports student development in SMA/SMK/MA, we propose solutions to the main problems faced today, namely in the field of data analysis. The solutions we offer are also in line with the government's program to increase Digital Talent in Indonesia. In the midst of increasing demand for Digital Talent, there is still a gap between the need for digital talent and job opportunities in Indonesia. The program we will create is Social Media Analysis Training, which will provide an understanding of the benefits of open social media data in general, how to take insights from social media data, and solve problems in various fields.

Keywords: *Big Data, Data Analytics, Digital Talent, Social Media Analysis*

Abstrak

Perkembangan teknologi digital telah memungkinkan masyarakat untuk saling berbagi opini di media sosial, mengirim email, melakukan pembelian secara online, hingga melakukan panggilan telepon setiap hari. Dampaknya, jumlah data terus bertambah dengan cepat dari hari ke hari. Sebagian besar data yang tersedia saat ini bersifat publik dan dapat diakses oleh siapa saja, seperti data media sosial, blog, berita, forum diskusi, data publik pemerintah, dan lain-lain. Dengan nilai yang besar dari sumber data media sosial yang melimpah ini, ada peluang untuk mengambil pengetahuan atau wawasan dari data media sosial yang tidak terstruktur ini, terutama untuk memahami opini, tren terkini, atau aktor yang berpengaruh terhadap informasi yang tersebar di internet. Sebagai bagian dari tim Pengabdian kepada Masyarakat IT Telkom Surabaya yang mendukung pengembangan siswa di SMA/SMK/MA, kami mengusulkan solusi untuk masalah utama yang dihadapi saat ini, yaitu dalam bidang analisis data. Solusi yang kami tawarkan juga sejalan dengan program pemerintah untuk meningkatkan Talenta Digital di Indonesia. Di tengah meningkatnya permintaan akan Talenta Digital, masih terdapat kesenjangan antara kebutuhan talenta digital dan peluang kerja di Indonesia. Program yang akan kami buat adalah Pelatihan Social Media Analysis, yang akan memberikan pemahaman tentang manfaat dari data media sosial yang terbuka secara umum, cara mengambil wawasan dari data media sosial, serta memecahkan masalah dalam berbagai bidang.

Kata Kunci: Big Data, Data Analytics, Digital Talent, Social Media Analysis

INTRODUCTION

Along with the development of interaction in the digital world and information technology, it is necessary to have human resources who can be adaptive to face these developments. The human resources needed are expected to have the ability to adapt to digital technology, in order to compete and develop in this millennial era [1]. There are efforts that have been carried out by the Government, such as conducting Digital Talent Scholarship training for various levels of education through the Digital Talent Scholarship Kominfo website. The types of training provided also vary, such as Fresh Graduate Academy, Vocational School Graduate Academy, Thematic Academy, Professional Academy, Government Transformation Academy, Digital Entrepreneurship Academy, Digital Leadership Academy, and Talent Scouting Academy [2]. However, there is no program that focuses on SMA/SMK/MA students, especially SMA/SMA/MA in East Java. Based on Basic Education Data from the Ministry of Education and Culture, it is known that the number of schools in East Java reached 2980. This shows that the potential of digital talents in East Java is very high and there needs to be a program that accelerates it [3].

In line with the government's program to improve Digital Talents in Indonesia, where in

the midst of the high pace of increasing digital talent demand of 9 million digital talents by 2030[4], Telkom Surabaya IT Campus created the ITTS Academy program to facilitate the training needed by students and teachers of high school / vocational / MA equivalent in East Java. Currently, there is no campus or institution that can facilitate this, even though many parties in almost every area of human life are beginning to realize the great benefits of this data growth, especially data on social media. With Social Media Analysis, the process of retrieving knowledge or insights from social media data is an opportunity that can be maximized, especially if you want to know opinions, the latest trends, or actors that influence information disseminated through the internet.

This training program is in line with the Roadmap Plan owned by the SISCOM Research Group at the Faculty of Information Technology and Business, IT Telkom Surabaya, where there is a big topic of Business & Management research, with a sub-topic of research on the application of digital transformation. It is hoped that with this program, the government's plan to increase Digital Talent in Indonesia will be achieved, which can be started from students and teachers of high school / vocational / MA equivalent.

The output produced from this training is in accordance with the aspects and priorities of existing problems, namely social, economic, and environmental aspects with the following details.

1.1 Economic aspects

Social media analysis training activities to support economic empowerment arise from the problem of not optimal use of data on the internet, especially social media data.

1.2 Social aspect

Training and mentoring in social media data analysis are provided to provide partner knowledge and skills. With this training, it is hoped that it can increase the spirit of digitalization from high school students and teachers equally.

1.3 Environmental aspects

The social media analysis training provided supports environmental aspects because of environmental limitations that support the younger generation to have data analysis skills.

METHOD

Based on the problems faced by partners, the Proposal Team provides solutions to overcome problems in accordance with the priority aspects previously described. The methods of solving the problem are:

1. Solve problems with Social Media Analysis Training

   Currently, the digital skills possessed by equivalent SMA/SMK/MA students are still low. Of course, in the long run, this is a weakness, because along with technological developments, the industry needs prospective talents who have the ability to adapt to the technology available today, such as data processing, especially data on social media. Data processing on social media that has been carried out in this training uses Social Network Analysis and Text Mining methods. Social Network Analysis (SNA) is a method for understanding the relationships between social entities in data, describing their behavior, and their impact on the network as a whole over time [5]. SNA methods have been commonly used in analyzing data in various sectors, including in the fields of health [6], agriculture [7], and politics[8]. Furthermore, the second method applied in this training, Text Mining, can be defined as the process of analyzing text to extract useful or important information for a specific purpose [9]. Bag-of-words (BoW) is a method of representation in natural language processing that captures the occurrence and frequency of words in a document [10]. This allows the analysis and extraction of information from text in a way that algorithms can process. BoW helps address unstructured datasets that are text, enabling automated processing for purposes such as document classification, sentiment analysis, and topic grouping. By translating text into numerical representations, BoW facilitates the use of mathematical and statistical methods in text mining. Text mining consists of a series of processes. The first step of text mining is to collect data in

the form of text that can be taken from news portals, tweets, magazines, and other media. This data in the form of text will go through a series of preprocesses, namely tokenization, removal of stopwords, and search for basic words [11]. Furthermore, from this data will be generated features which will be selected to determine important features and in accordance with what is desired. This feature will be used for applications such as Information retrieval, Information Extraction, Summarization, and Topic Discovery. The purpose of this introduction to text mining is that in addition to participants being able to find out examples of applications, participants will also get to know the challenges that will be faced in everyday life [12].

Text mining conducted in this training will focus on the topic of sentiment analysis. Sentiment Analysis is a method of extracting knowledge and analyzing the emotional tendencies present in the text. In this case, the knowledge to be obtained is the opinions expressed by the user on various topics: politics, religion, economics, business, and so on [13]. The methods used for sentiment analysis can be as diverse as Naive Bayes [14], K-Means [15], and SVM [16].

The case study we took in this training was about the viral movie "Barbie." With the Social Network Analysis method, a business can find out to understand the interaction patterns related to their brand or product on social media [17]. Meanwhile, with Sentiment Analysis, a business can analyze public opinion and satisfaction related to their product or brand [18]. Hopefully, this can help a business in making decisions and determining future strategies not based on assumptions alone but based on data in the community.

2. Digital Talent Coaching
   Teachers and high school students who already have the ability to analyze data will be collected in a community so that they can continue to follow digital developments and new methods.

RESULTS AND DISCUSSION

Social Media Analysis Training to Increase Digital Talent

In line with government programs that aim to improve Digital Talents in Indonesia, Telkom Surabaya IT Campus has created a program called ITTS Academy. This program aims to facilitate the training needed by students and teachers of equivalent high schools / vocational schools / MA in East Java. This program was created considering the increasing rate of need for digital talent.

The purpose of this training is to instill teacher and student awareness of the importance of learning Social Media Analysis to find out the latest trends, utilize effective technology to obtain maximum results, increase understanding, skills, and skills in Social Media Analysis so that it can open career development opportunities, become a means of expression and shape the potential of creative teachers and students, innovative and productive, and the creation of the potential to grow digital talent.

The following is the Social Media Analysis Training that has been conducted by the team:

Figure 1. Social Media Analysis Training for High School Students and Teachers

In the future, we will continue to hold other trainings to improve digitalization, especially for the younger generation in Indonesia.

CONCLUSION

Data Analytics is a competency needed by the younger generation in Indonesia to be able to utilize data in the decision-making process. Therefore, we carry out Social Media Analysis Training to provide *skills* for teachers and high school students of the same level in East Java so that they can prepare the younger generation who are competent in conducting data analysis, especially on social media data.

SUGGESTION

Social Media Analysis training can be an ongoing program using various data analysis methods that keep up with the times.

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